

AMENDMENTS TO THE CLAIMS

1 1-2. (Cancelled)

1 3. (Currently Amended) A system including
2 an input port for receiving network packets;
3 a sampling element for selecting a fraction of those packets for review, said
4 sampling element including a feedback element for adaptively altering said fraction;
5 a queue of selected packets;
6 a packet-type detector to detect packets of a particular type, said packet type detector
7 coupled to said queue; and
8 a frequency measurement element to determine an expected frequency of a particular
9 packet type, said frequency measurement element coupled to said packet-type detector;
10 wherein said feedback element is responsive to a length of said queue.

1 4. (Cancelled)

1 5. (Original) A system as in claim 3, wherein said feedback element is responsive
2 to a load on said frequency measurement element.

1 6. (Original) A system as in claim 3, wherein said feedback element is responsive
2 to a frequency measure determined by said frequency measurement element.

1 7. (Previously Amended) A method, including steps for sampling a set of packets at
2 a network interface of a switch, said steps for sampling including steps for adaptively
3 altering a fraction of said packets for selection;

4 wherein said steps for adaptively altering a fraction of said packets for selection include
5 steps for
6 maintaining a queue of selected packets; and
7 altering said fraction in response to a length of said queue.

1 8. (Cancelled)

1 9. (Original) A method as in claim 7, wherein said steps for adaptively altering a
2 fraction of said packets for selection include steps for
3 measuring a frequency of packets of a known type within said selected packets;
4 altering said fraction in response to a load imposed by said steps for measuring.

1 10. (Original) A method as in claim 7, wherein said steps for adaptively altering a
2 fraction of said packets for selection include steps for altering said fraction in response to
3 two or more factors responsive to said selected packets.

1 11. (Original) A method as in claim 7, including steps for determining a frequency of
2 packets of a known type within said selected packets.

1 12. (Original) A method as in claim 11, including steps for determining an error
2 range for said measured frequency.

1 13. (Original) A method as in claim 11, including steps for
2 setting a control parameter;
3 sampling said received packets in response to said control parameter, to
4 provide a queue of sampled packets;
5 comparing a length of said queue with a threshold;
6 altering said control parameter in response to said threshold.

1 14. (Original) A method as in claim 13, wherein said control parameter is a fraction
2 of said received packets to sampled for said queue.

1 15. (Original) A method as in claim 13, wherein said threshold includes at least one
2 of: a lower bound for said length, an upper bound for said length.

1 16. (Original) A method as in claim 13, wherein said threshold includes a lower
2 bound for said length and said steps for altering said control parameter operate to lengthen
3 said queue in response to said steps for comparing.

1 17. (Original) A method as in claim 13, wherein said control parameter is a fraction
2 of said received packets to sample for said queue;
3 said threshold includes a lower bound for said length; and
4 said steps for altering said control parameter decrease said control parameter in
5 response to said steps for comparing.

1 18. (Original) A method as in claim 13, wherein said threshold includes an upper
2 bound for said length and said steps for altering said control parameter operate to shorten
3 said queue in response to said steps for comparing.

1 19. (Original) A method as in claim 13, wherein
2 said control parameter is a fraction of said received packets to sample for said queue;
3 said threshold includes an upper bound for said length; and
4 said steps for altering said control parameter increase said control parameter in
5 response to said steps for comparing.

1 20. (Original) A method as in claim 13, wherein said steps for altering said control
2 parameter operate to maintain said control parameter constant for at least a selected number
3 of sampled packets.

1 21. (Original) A method as in claim 13, wherein said steps for sampling do not
2 produce skew.

1 22. (Currently Amended) A system including
2 means for collecting aggregate information about network traffic;
3 means for maintaining processor load relatively constant for a processor
4 controlling said means for collecting despite substantial variation in network traffic;
5 wherein said means for collecting and said means for maintaining include an
6 input port for receiving network packets, a sampling element for selecting a fraction of those
7 packets for review, said sampling element including a feedback element for adaptively

8 altering said fraction, a queue of selected packets, a packet-type detector to detect packets
9 of a particular type, said packet-type detector coupled to said queue, and a frequency
10 measurement element to determine an expected frequency of a particular packet type, said
11 frequency measurement element coupled to said packet-type detector; and
12 wherein said feedback element is responsive to a length of said queue.

1 23. (Previously Added) A system as in claim 3, wherein a default value for said
2 fraction is selected response to a bandwidth of said input type.

1 24. (Previously Added) A system as in claim 23, wherein said fraction is adaptively
2 altered based on a presence or absence of a particular type of packet selected from among
3 plural types of packets.

1 25. (Previously Added) A method as in claim 7, wherein a default value for said
2 fraction is selected response to a bandwidth of said network interface.

1 26. (Previously Added) A method as in claim 25, wherein said fraction is adaptively
2 altered based on a presence or absence of a particular type of packet selected from among
3 plural types of packets.

1 27. (Previously Added) A system as in claim 22, wherein a default value for said
2 fraction is selected response to a bandwidth of said input port.

1 28. (Previously Added) A system as in claim 27, wherein said fraction is adaptively
2 altered based on a presence or absence of a particular type of packet selected from among
3 plural types of packets.

1 29. (New) A computer-readable medium carrying one or more instructions, wherein
2 execution of the one or more sequences of instructions by one or more processors causes the
3 one or more processors to perform the step of:
4 sampling a set of packets at a network interface of a switch, said step for sampling
5 including steps for adaptively altering a fraction of said packets for selection;
6 wherein said steps for adaptively altering a fraction of said packets for selection include
7 steps for
8 maintaining a queue of selected packets; and
9 altering said fraction in response to a length of said queue.

1 30. (New) The computer-readable medium of claim 29, wherein said steps for
2 adaptively altering a fraction of said packets for selection include steps for
3 measuring a frequency of packets of a known type within said selected packets;
4 altering said fraction in response to a load imposed by said steps for measuring.

1 31. (New) The computer-readable medium of claim 29, wherein said steps for
2 adaptively altering a fraction of said packets for selection include steps for altering said
3 fraction in response to two or more factors responsive to said selected packets.

1 32. (New) The computer-readable medium of claim 29, wherein the computer-
2 readable medium further includes sequences of instructions for performing steps for
3 determining a frequency of packets of a known type within said selected packets.

1 33. (New) The computer-readable medium of claim 32, wherein the computer-
2 readable medium further includes sequences of instructions for performing steps for
3 determining an error range for said measured frequency.

1 34. (New) The computer-readable medium of claim 32, wherein the computer-
2 readable medium further includes sequences of instructions for performing steps for
3 setting a control parameter;
4 sampling said received packets in response to said control parameter, to
5 provide a queue of sampled packets;
6 comparing a length of said queue with a threshold;
7 altering said control parameter in response to said threshold.

1 35. (New) The computer-readable medium of claim 34, wherein said control
2 parameter is a fraction of said received packets to sampled for said queue.

1 36. (New) The computer-readable medium of claim 34, wherein said threshold
2 includes at least one of: a lower bound for said length, an upper bound for said length.

1 37. (New) The computer-readable medium of claim 34, wherein said threshold
2 includes a lower bound for said length and said steps for altering said control parameter
3 operate to lengthen said queue in response to said steps for comparing.

1 38. (New) The computer-readable medium of claim 34, wherein said control
2 parameter is a fraction of said received packets to sample for said queue;
3 said threshold includes a lower bound for said length; and
4 said steps for altering said control parameter decrease said control parameter
5 in response to said steps for comparing.

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1 39. (New) The computer-readable medium of claim 34, wherein said threshold
2 includes an upper bound for said length and said steps for altering said control parameter
3 operate to shorten said queue in response to said steps for comparing.

1 40. (New) The computer-readable medium of claim 34, wherein
2 said control parameter is a fraction of said received packets to sample for said
3 queue;
4 said threshold includes an upper bound for said length; and
5 said steps for altering said control parameter increase said control parameter in
6 response to said steps for comparing.

1 41. (New) The computer-readable medium of claim 34, wherein said steps for
2 altering said control parameter operate to maintain said control parameter constant for at
3 least a selected number of sampled packets.

1 42. (New) A computer-readable medium as recited in claim 34, wherein said steps
2 for sampling do not produce skew.

F3 1 43. (New) A computer-readable medium as recited in claim 29, wherein a default
2 value for said fraction is selected response to a bandwidth of said network interface.

1 44. (New) A computer-readable medium as recited in claim 43, wherein said fraction
2 is adaptively altered based on a presence or absence of a particular type of packet selected
3 from among plural types of packets.
